Please replace existing pages 92-99 with new pages 92-99D concerning the Sequence Listing as discussed below.

IN THE CLAIMS

26. (**Amended**) A purified and isolated nucleic acid sequence selected from the group consisting of:

(a) sequences having nucleotides 304 through 705 of SEQ ID NO:3 or nucleotides 105 through 506 of SEQ ID NO:5;

(b) sequences which encode a polypeptide having an amino acid sequence set forth in SEQ ID NO:4 or SEQ ID NO:6;

(c) sequences which encode a polypeptide at least 70% homologous to an amino acid sequence set forth in SEQ ID NO:4 or SEQ ID NO:6;

(d) sequences which hybridize to nucleic acid sequences complementary to those defined in (a), (b) or (c); or

(e) sequences which, but for the degeneracy of the genetic code, would hybridize to a nucleic acid sequence complementary to a sequence defined in (a), (b), (c) or (d);

encoding glial cell line-derived neurotrophic factor which stimulates dopamine uptake in dopaminergic neurons.

28. (**Amended**) The nucleic acid sequence of claim 26 [comprised of the human nucleic acid sequence] encoding a mature human glial cell line-derived neurotrophic factor comprising nucleotides 105 through 506 of SEQ ID NO:5 [as set forth in Fig. 19 (SEQ ID NO:5)].

29. (**Amended**) The [A] purified and isolated nucleic acid sequence of claim 26 further comprising nucleotides encoding the pre-pro amino acid sequence as set forth in SEQ ID NO:25 amino acid residues 1 through 77 [glial derived neurotrophic factor].

31. (**Amended**) A purified and isolated [The] nucleic acid sequence selected from the group consisting of:

(a) a sequence [of claim 28 comprised of the human nucleic acid sequence] encoding the pre-pro form of human glial cell line-derived neurotrophic factor as set forth in SEQ ID NO:25 amino acid residues 1 through 211 [Figures 19 (SEQ ID NO:5) and 22 (SEQ ID NO:8).];

(b) sequences which encode a polypeptide at least 70% homologous to an amino acid sequence set forth in SEQ ID NO:25;

(c) sequences which hybridize to nucleic acid sequences complementary to those defined in (a) or (b);

(d) sequences which, but for the degeneracy of the genetic code, would hybridize to a nucleic acid sequence complementary to a sequence defined in (a), (b) or (c).

34. (**Amended**) The nucleic acid sequence of claim 26 encoding the amino acid sequence of mature human glial cell line-derived neurotrophic factor as set forth in SEQ ID NO:6.

42. (**Amended**) A recombinant DNA vector [molecule] comprising expression regulatory elements operatively linked to a nucleic acid sequence of Claim 26 [encoding glial derived neurotrophic factor].

43. (**Amended**) A host cell transformed or transfected with the vector of claim 42.

44. (**Amended**) A recombinant DNA method for the production of glial cell line-derived neurotrophic factor comprising the steps of:

(a) cloning [subcloning] a DNA sequence of Claim 26 encoding [for] glial cell line-derived neurotrophic factor into an expression vector which comprises the regulatory elements needed to express the DNA sequence;

(b) transforming host cells [a host cell] with said expression vector;

(c) culturing the host cells under conditions for [amplification of the vector and] expression of glial cell line-derived neurotrophic factor; and

(d) harvesting the glial cell line-derived neurotrophic factor from the host cell culture.

45. The recombinant DNA method of claim 44 wherein said host cell is an animal cell.

46. (**Amended**) The recombinant DNA method of claim 45 wherein said host cell is a COS-7 cell [cells].

47. The recombinant DNA method of claim 44 wherein said host cell is a bacterial cell.

48. The recombinant DNA method of claim 47 wherein said host cell is *E. coli*.

49. **(Amended)** The recombinant DNA method of claim 48 further comprising the step of refolding the harvested glial cell line-derived neurotrophic factor.

50. **(Amended)** A recombinant DNA method for the production of glial cell line-derived neurotrophic factor comprising the steps of:

(a) culturing the host cell of claim 43 under conditions for amplification of the vector and expression of glial cell line-derived neurotrophic factor; and

(b) harvesting the glial cell line-derived neurotrophic factor from the host cell culture.

51. The recombinant DNA method of claim 50 wherein said host cell is an animal cell.

52. **(Amended)** The recombinant DNA method of claim 51 wherein said host cell is a COS-7 cell [cells].

53. The recombinant DNA method of claim 50 wherein said host cell is a bacterial cell.

54. The recombinant DNA method of claim 53 wherein said host cell is *E. coli.*

55. **(Amended)** The recombinant DNA method of claim 54 further comprising the step of refolding the harvested glial cell line-derived neurotrophic factor.

Please add claims 75 through 88:

75. **(Newly added)** A nucleic acid sequence for use in the recombinant expression of glial cell line-derived neurotrophic factor in a eucaryotic or prokaryotic host cell, wherein said nucleic acid sequence encodes a polypeptide at least 90% homologous to an amino acid sequence of SEQ ID NO:4 or SEQ ID NO:6 and which stimulates dopamine uptake in dopaminergic neurons.

76. **(Newly added)** An expression vector comprising expression regulatory elements operatively linked to a nucleic acid sequence according to Claim 75.

77. **(Newly added)** A host cell transformed or transfected with an expression vector according to Claim 76.

78. **(Newly added)** A host cell according to Claim 77, wherein said host cell is a

microorganism.

79. **(Newly added)** A host cell according to Claim 77, wherein said host cell is an animal cell.

80. **(Newly added)** A host cell according to Claim 77, wherein said cell is suitable for human implantation and wherein said cell expresses and secretes glial cell line-derived neurotrophic factor.

81. **(Newly added)** A host cell according to Claim 80, wherein said cell is enclosed in a semipermeable membrane suitable for human implantation.

82. **(Newly added)** A host cell according to Claim 77, wherein said cell is transformed or transfected *ex vivo*.

83. **(Newly added)** A host cell according to Claim 43, wherein said cell is transformed or transfected *ex vivo*.

84. **(Newly added)** A host cell according to Claim 43, wherein said cell is suitable for human implantation and wherein said cell expresses and secretes glial cell line-derived neurotrophic factor.

85. **(Newly added)** A host cell according to Claim 84, wherein said cell is enclosed in a semipermeable membrane suitable for human implantation.

86. **(Newly added)** A method for the production of glial cell line-derived neurotrophic factor comprising the steps of:

(a) culturing a prokaryotic or eukaryotic host cell transformed or transfected with a nucleic acid sequence according to Claim 75;

(b) maintaining said host cell under conditions allowing the expression of glial cell line-derived neurotrophic factor by said host cell; and

(c) optionally, isolating the glial cell line-derived neurotrophic factor expressed by said host cell.

87. **(Newly added)** A nucleic acid sequence, for use in the recombinant expression of glial cell line-derived neurotrophic factor in a eucaryotic or prokaryotic host cell,

encoding a polypeptide which stimulates dopamine uptake in dopaminergic neurons and which is bound by an antibody which binds to an amino acid sequence set forth in SEQ ID NO:4 or SEQ ID NO:6.

88. **(Newly added)** A nucleic acid sequence for use in the recombinant expression of glial cell line-derived neurotrophic factor in a prokaryotic host cell, wherein said nucleic acid sequence encodes an amino acid sequence of the formula:

Met Ser Pro Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg
Asn Arg Gln Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys
Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr
Ala Ile His Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr
Lys Glu Glu Leu Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala
Ala Glu Thr Thr Tyr Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn
Arg Arg Leu Val Ser Asp Lys Val Gly Gln Ala Cys Cys Arg Pro
Ile Ala Phe Asp Asp Asp Leu Ser Phe Leu Asp Asp Asn Leu Val
Tyr His Ile Leu Arg Lys His Ser Ala Lys Arg Cys Gly Cys Ile

89. **(Newly added)** An expression vector comprising expression regulatory elements operatively linked to a nucleic acid sequence according to Claim 31.

90. **(Newly added)** A host cell transformed or transfected with an expression vector according to Claim 89.

91. **(Newly added)** A host cell according to Claim 90, wherein said host cell is a microorganism.

92. **(Newly added)** A host cell according to Claim 90, wherein said host cell is an animal cell.

93. **(Newly added)** A host cell according to Claim 90, wherein said cell is suitable for human implantation and wherein said cell expresses and secretes glial cell line-derived neurotrophic factor.

94. **(Newly added)** A method for the production of glial cell line-derived neurotrophic factor comprising the steps of:

(a) culturing a prokaryotic or eukaryotic host cell transformed or transfected with a